

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.**

In the Matter of)	
)	
Hearing Aid Compatibility Requirements for)	WT Docket No. 06-
203		
Wireless Telecommunications Devices)	
)	

**REPLY COMMENTS OF
RESEARCH IN MOTION LIMITED**

Research In Motion Limited (“RIM”) herewith respectfully submits its reply comments in the above-captioned proceeding. RIM supports the view of several commenters that the Commission’s existing framework for achieving hearing-aid compatibility (“HAC”) in digital wireless communications services and devices faces serious looming technical challenges. In particular, RIM writes to support the thoughtful technical analysis and conclusions presented in the technical whitepaper submitted by the Alliance for Telecommunications Industry Solutions (“ATIS”). RIM writes further to support the principles for reform of the Commission’s HAC rules that ATIS presents in its reply comments, representing a framework jointly-agreed upon by manufactures, carriers and consumer groups.

RIM urges the Commission to consider alternative approaches that might better accomplish the twin goals of ensuring that consumers with hearing disabilities have access to modern digital wireless communications services and devices, and ensuring that all consumers can choose amongst the widest array of digital wireless devices.

I. INTRODUCTION

RIM is a leading designer, manufacturer and marketer of innovative wireless solutions for the worldwide mobile communications market. Through the development of integrated hardware, software and services that support multiple wireless network standards, RIM provides platforms and solutions for seamless access to time-sensitive information including email, phone, text messaging (SMS and MMS), Internet and intranet-based applications. RIM technology also enables a broad array of third party developers and manufacturers to enhance their products and services with wireless connectivity to data. RIM's portfolio of award-winning products, services and embedded technologies are used by thousands of organizations around the world and include the BlackBerry wireless platform, the RIM Wireless Handheld product line, software development tools, radio-modems and other hardware and software. RIM's flagship BlackBerry platform of wireless devices, software and services is available from 225 carriers in approximately 100 countries, serving approximately 5 million subscribers in North America and approximately 7 million subscribers worldwide.

As a leading developer of wireless handheld devices for both enterprise and consumer customers, RIM is strongly supportive of maintaining a wide array of choices for wireless handheld devices. Unfortunately, as discussed in further detail below, the operation of the Commission's current rules for HAC restricts that choice for all consumers, whether hearing-impaired or not. The current rules restrict that choice by creating uncertainty for manufacturers, carriers and consumers over the availability of HAC-compliant wireless phone models. Furthermore, the current rules place a disproportionate burden on GSM¹ technologies, the most widely deployed air interface worldwide.² In a global marketplace for both wireless handsets and network equipment, this disproportionate burden on GSM reduces consumer choice for the one air interface where the greatest array of choices should otherwise exist.

In its 2003 Order, the Commission wisely chose to reexamine the operation of its HAC rules for wireless devices. The staff of the Wireless Telecommunications Bureau should use this opportunity to frankly assess the serious technological challenges the Commission's current rules erect for wireless manufacturers, carriers and consumers. Furthermore, the

¹ The Global System for Mobile Communications (GSM) is a digital air interface for wireless systems that divides each wireless channel into eight discrete time slots, which allows up to eight simultaneous calls using the same frequency. *See Cingular Waiver Order* at n. 1.

² GSM providers serve more than 2 billion customers representing 82% of the world's mobile phone users. *See* "The GSM Association Brochure 2006," Feb. 2006 (available at <http://www.gsmworld.com/about/index.shtml>).

Commission should support the efforts of ATIS Working Group 10³ to develop an alternative approach that better accomplishes the goals of creating choices for all consumers, both hearing-impaired and not.

II. BACKGROUND

The Commission's 2003 *Wireless HAC Order* removed the statutory exemption from hearing aid compatibility requirements for wireless phones, requiring manufacturers and carriers to make available minimum numbers of hearing-aid compatible devices.⁴ As ATIS' comments note, however, the Commission recognized at the time that its rules were a "work in progress," subject to revision and refinement as industry technical standards evolved.⁵

Since the adoption of its 2003 Report and Order, the Commission has recognized that its HAC rules face a series of serious technical challenges in the GSM air interface. In its original order, the Commission took note that TDM-based technologies, including GSM, faced the most serious challenges in reducing interference to acceptable levels under the ANSI C63.19 standard.⁶ Although the Commission recognized that its HAC rules faced different challenges in different technologies, at the time it decided to adopt

³ For convenience, RIM hereinafter refers to the working group ATIS AISP.4-HAC WG-10 as "ATIS Working Group 10." This working group is a subset of the ATIS Incubator Solutions Program #4-Hearing Aid Compatibility (AISP.4-HAC).

⁴ *Section 68.4(a) of the Commission's Rules Governing Hearing Aid-Compatible Telephones*, Report and Order, 18 FCC Rcd 16753 (2003) ("*Wireless HAC Order*").

⁵ See ATIS Comments at 2-3; *Wireless HAC Order* at para. 63.

⁶ See *Wireless HAC Order* at n. 71 and para. 76.

one set of rules for all air interface technologies, with the aim of maintaining technological neutrality.⁷

In 2005, the Commission again recognized the serious challenges its HAC rules presented for GSM handsets, specifically those handsets operating in the 850 MHz band. As a result, for dual-mode handsets the Commission temporarily allowed compliance in the 1900 MHz band to count towards its HAC benchmarks.⁸ As the Commission took note in that Order:

The ANSI C63.19 standard requires wireless phones using the GSM air interface to have lower emissions than wireless phones that use other air interfaces because GSM uses time division that switches at a rate that falls within the audio spectrum... While the transmitter power could be reduced to achieve compliance, this would result in the phone not operating as reliably as a full power phone. Other measures, such as increasing the thickness of the phone to reduce emissions at the earpiece, would make the phone less convenient to carry and operate.⁹

In making this statement, the Commission was specifically focused on the greater challenges GSM faces at the 850 MHz band. As discussed below and more fully in ATIS' Comments, however, these same factors create significant technical challenges under the ANSI specification for GSM in all spectrum bands, to varying degrees.

III. CURRENT HAC RULES CREATE DISPROPORTIONATE CHALLENGES FOR GSM HANDSETS

⁷ *See id.*

⁸ *Section 68.4(a) of the Commission's Rules Governing Hearing Aid-Compatible Telephones*, Memorandum Opinion and Order, 20 FCC Rcd 15108 (2005) ("*Cingular Waiver Order*").

⁹ *See id.* at n. 26.

RIM agrees with ATIS' detailed analysis of the continuing disproportionate technical challenges the Commission's HAC rules erect for handsets and services employing GSM air interfaces. As the latest HAC status report to the Commission shows, a majority of CDMA models offered by manufactures and carriers achieve compliance with the ANSI C63.19 standard – 88% by manufacturers and 55% by carriers, respectively.¹⁰ By contrast, only a small minority of GSM models offered by manufacturers and carriers comply with ANSI C63.19 – 22% by manufacturers and 19% by carriers.¹¹ RIM's individual experience as a manufacturer bears out these industry-wide trends, with all three of its CDMA models achieving compliance with the ANSI C63.19 standard but only 2 of its 5 GSM models able to do so.¹²

As ATIS's comments explain, GSM devices face disproportionate challenges primarily due to three main factors. The first is CDMA's "technical operating parameters, especially its lower output power for the wireless handset," compared to GSM's higher power output.¹³ Secondly, the articulation weighting factor (AWF) in the ANSI standard is more stringent

¹⁰ See ATIS Comments at 14. See also "Hearing Aid Compatibility Compliance Efforts, Status Report #6," submitted by the Alliance for Telecommunications Industry Solutions on behalf of The ATIS Incubator Solutions Program #4, WT Dkt. No. 01-309, filed on Nov. 17, 2006 ("Status Report").

¹¹ See ATIS Comments at 14.

¹² See Status Report Attachment A (report by Research In Motion Limited dated Nov. 17, 2006).

¹³ See ATIS Comments at 14.

for GSM than for CDMA. As demonstrated in ATIS' comments, GSM faces an 11.5 dB disadvantage in the 850 MHz band and an 8.5 dB disadvantage in the 1900 MHz band in meeting ANSI C63.19 standards, as compared to CDMA devices operating in the same bands.¹⁴ Thus, while greater challenges exist in the 850 MHz band (consistent with the Commission's findings in the *Cingular Waiver Order*), ATIS' analysis demonstrates that GSM faces serious technical challenges under the ANSI standard in both the 850 MHz and the 1900 MHz bands. Third, GSM uses a Time Division Multiple Access ("TDMA") technique to multiplex its signal, with a transmit frequency of 217 Hz (within audible range). When this RF emission interacts with an inadequately shielded hearing aid, the result can be audible distortion in the hearing aid at 217 Hz and its harmonics.¹⁵ By contrast, CDMA, or Code Division Multiple Access, uses multiplexing with a more characteristically random pulse structure. When this RF emission interacts with an inadequately shielded hearing aid, the resulting distortion ranges from static-like to white noise, with a potentially more useable hearing aid experience.¹⁶

IV. CURRENT HAC RULES ARBITRARILY LIMIT CONSUMER CHOICE

¹⁴ *See id.* at 16.

¹⁵ *See id.* at 19.

¹⁶ *See id.*

RIM agrees with ATIS' technical analysis of the effect that form factor and size play in creating technical obstacles to meeting the ANSI C63.19 standard. As ATIS' comments show, particularly in the GSM air interface, manufacturers have been forced to make design decisions favoring bulkier handsets, clamshell form factors (rather than slider, swivel or candy-bar forms), plastic casings (rather than metal), smaller displays and relocated or even retractable antennas in order to meet the ANSI specification for hearing-aid compatibility.¹⁷ These have been core industrial design decisions, regulation-driven rather than market-driven. The current HAC rules would make these core industrial design decisions across 50% of any manufacturer's product portfolio in little over one year.

RIM supports the Commission's policy to promote the availability of wireless communications for users of hearing aids. According to available figures, 31 million Americans suffer from hearing loss, representing one in ten Americans, and their numbers are expected to reach 40 million by the end of the decade.¹⁸ According to figures published by the Hearing Loss Association of America, 6.35 million individuals representing 25% of the hearing-impaired currently use hearing aids, while 95% of the hearing impaired could be treated with hearing aids.¹⁹ RIM agrees that serving this

¹⁷ *See id.* at 21-29.

¹⁸ *See* Comments of HLAA, et al., at 19. *See also* "Facts on Hearing Loss," Hearing Loss Association of America, available at <http://www.hearingloss.org/docs/factsheet.pdf> (as of January 31, 2007).

¹⁹ *See id.*

sizeable demographic and significant market segment is an important public policy.

As shown by ATIS' status reports on HAC offerings, in the little over 3 years since the Commission's adoption of HAC requirements for wireless devices, handset manufacturers have made tremendous efforts to serve the hearing impaired – reaching compliance for 88% of CDMA models²⁰ and, in RIM's case, reaching 100% compliance for its three CDMA models.²¹ RIM takes exception to the comments of the Hearing Industries Association questioning “the handset industry [commitment]...toward doing their best to eliminating the hearing aid compatibility problem.”²² In fact, the same questions could be asked about the hearing aid industry's commitment to producing hearing aids tested and labeled according to ANSI C63.19, as reflected in the comments by the Technology Access Program at Gallaudet University:

In its rules, the Commission urged the hearing aid industry to test and label hearing aids, so that consumers could have full knowledge of the predicted performance of the aid with a WD [wireless device]. This, to date, has not happened... Without information about their hearing aid's immunity, they can find the best rated phone, through WD labeling, but they cannot know for sure that the two devices are compatible.²³

²⁰ See *supra* at 2 and n. 10.

²¹ See *supra* n. 12.

²² See Comments of the Hearing Industries Association at 3.

²³ See Comments of the Technology Access Program, Gallaudet University, at 5.

Rather than questioning each other's commitment to serve the hearing-impaired, RIM believes that handset manufacturers and hearing-aid manufacturers should be working together, through ATIS Working Group 10, in developing a better alternative approach.

As explained above, the current approach of the Commission's HAC rules would drive core industrial design decisions for 50% of wireless handset products – an ill-fitted approach to serving the one in ten Americans who are hearing-impaired. As ATIS' whitepaper demonstrates, these design decisions reduce choices for wireless devices to a limited set of form factors, materials and sizes for millions of hearing-aid users as well as the rest of the nearly 220 million wireless subscribers across the U.S.²⁴ A better approach is needed. RIM is greatly encouraged by the joint statement of HAC principles set out in ATIS' reply comments, agreed to by handset manufacturers, carriers and representatives of hearing-impaired consumers. RIM will continue to work with its industry partners in ATIS, representatives for the hearing-impaired and the Commission in fashioning a better alternative approach to the current rules.

V. CONCLUSION

RIM commends ATIS for its thoughtful and detailed technical analysis of the serious technical challenges facing implementation of the Commission's

²⁴ See "CTIA Wireless Quick Facts," Cellular Telecommunications Industry Association, available at http://www.ctia.org/research_statistics/index.cfm/AID/10202 (showing 219.4 million wireless subscribers as of September 2006).

current HAC rules. Without modification, these rules will work to limit the range of choices for wireless devices for both hearing-impaired customers and non-hearing impaired customers. RIM urges the Commission to recognize the serious technical challenges facing its current HAC rules, and to support ATIS' ongoing work with representatives for the hearing-impaired in developing an alternative approach.

Respectfully submitted,

_____/s/_____
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